

## CLAIMS

1. A mounting structure in optical subassemblies comprising:

an optical system with an I/O light port;

a supporting substrate positioned adjacent the optical system;

an optoelectronic device with an I/O light port;

a mounting comb with a plurality of spaced apart fingers fixedly mounted on the substrate;

a receiving comb with a plurality of spaced apart fingers having the optoelectronic device fixedly mounted thereon; and

the fingers of the receiving comb being fixed in an interdigitated orientation with the fingers of the mounting comb by a layer of adhesive positioned therebetween so that the I/O light port of the optoelectronic device is optically aligned with the I/O light port of the optical system.

2. A mounting structure in optical subassemblies as claimed in claim 1 wherein the optoelectronic device is one of a light emitting device and a light receiving device.

3. A mounting structure in optical subassemblies as claimed in claim 2 wherein the light emitting device is one of an edge emitting laser and a surface-emitting laser.

4. A mounting structure in optical subassemblies as claimed in claim 2 wherein the light receiving device is a photodiode.

5. A mounting structure in optical subassemblies as claimed in claim 1 wherein the optical system includes an optical fiber.

6. A mounting structure in optical subassemblies as claimed in claim 1 wherein the adhesive positioned between the interdigitated fingers includes one of epoxy, glue, and solder.

7. A mounting structure in optical subassemblies comprising:

an optical system with an I/O light port;

a supporting substrate positioned adjacent the optical system;

an optoelectronic device with an I/O light port;

a mounting comb including a base with a mounting surface and a plurality of spaced apart fingers extending from the base perpendicular to and opposite the mounting surface of the mounting comb, the mounting surface of the mounting comb being fixedly attached to a surface of the substrate with the plurality of spaced apart fingers of the mounting comb extending outwardly from the substrate;

a receiving comb including a base with a mounting surface and a plurality of spaced apart fingers extending from the base perpendicular to and opposite the mounting surface of the receiving comb, the optoelectronic device being fixedly mounted on the mounting surface of the receiving comb; and

the fingers of the receiving comb being fixed in an interdigitated orientation with the fingers of the mounting

comb by a layer of adhesive positioned therebetween so that the optoelectronic device is spaced from the substrate and the I/O light port of the optoelectronic device is optically aligned with the I/O light port of the optical system.

8. A mounting structure in optical subassemblies as claimed in claim 7 wherein the optoelectronic device is one of a light emitting device and a light receiving device.

9. A mounting structure in optical subassemblies as claimed in claim 8 wherein the light emitting device is one of an edge emitting laser and a surface-emitting laser.

10. A mounting structure in optical subassemblies as claimed in claim 8 wherein the light receiving device is a photodiode.

11. A mounting structure in optical subassemblies as claimed in claim 7 wherein the optical system includes an optical fiber.

12. A mounting structure in optical subassemblies as claimed in claim 7 wherein the adhesive positioned between the interdigitated fingers includes one of epoxy, glue, and solder.

13. A method of mounting and optically aligning an optical device with an optical system in an optical subassembly, comprising the steps of:

providing an optical system with an I/O light port, a supporting substrate positioned adjacent the optical system, an optoelectronic device with an I/O light port, a mounting comb including a base with a mounting surface and a plurality of spaced apart fingers extending from the base perpendicular to and opposite the mounting surface of the mounting comb, and a receiving comb including a base with a mounting surface and a plurality of spaced apart fingers extending from the base perpendicular to and opposite the mounting surface of the receiving comb;

fixedly attaching the mounting surface of the mounting comb to a surface of the substrate with the plurality of spaced apart fingers of the mounting comb extending outwardly from the substrate;

fixedly mounting the optoelectronic device on the mounting surface of the receiving comb;

applying a layer of adhesive to one of surfaces of the plurality of fingers of the receiving comb and the plurality of fingers of the mounting comb; and

placing the fingers of the receiving comb in an interdigitated orientation with the fingers of the mounting comb so that the optoelectronic device is spaced from the substrate and the I/O light port of the optoelectronic device is optically aligned with the I/O light port of the optical system.

14. A method as claimed in claim 13 wherein the step of applying the layer of adhesive includes applying a layer with a thickness in a range of approximately 3  $\mu\text{m}$  to 10  $\mu\text{m}$ .

15. A method as claimed in claim 13 wherein the step of applying the layer of adhesive includes applying a layer of adhesive with a thickness sufficient to misalign the I/O light port of the optoelectronic device and the I/O light port of the optical system and further includes applying pressure to the receiving comb sufficient to bring the I/O light port of the optoelectronic device into optical alignment with the I/O light port of the optical system.